development has not been satisfactory. In Western Ukraine small mills continued to operate with an output in 1932 of about 4 million t flour (and 170 000 t barley groats). 256

The oil industry manufactured native products and is best developed in the Kuban area. In 1934, 90 000 t oil were produced, and in Dnipro-Ukraine 58 000 t = about 40 % of the total production for USSR. Large oil plants have been constructed since then in Slovjanske, Dnipropetrovske and Krasnodar. 258

More than ¾ of the canned food required for the whole of Russia was produced in Ukraine. There are plans for a large-scale development of this industry. 255

Breweries and distilleries are not yet developed; out of a total number of 225 distilleries, 151 are in Galicia, but they supplied about 40 % of the Soviet production before the first Five-Year Plan. 274

There were about 80 tobacco factories before World War I, with an output of 9 000 t; in 1927/28 there were only 26 factories which produced more than 20 milliard cigarettes, i. e. 360 000 t = 36 — 54 % of the production for USSR. 277

### 10. Other Branches of Industry

Slate production in Ukraine increased from 2 000 t in 1913 to 14 500 t in 1931; the raw material was manufactured in two plants in Zavalla and Mariupil. 339

A highly developed cement industry in Novorossijske (10 plants) used to produce 633 000 t annually. In 1934, 5 of the plants there produced 1 million t, and with Dnipro-Ukraine 1.5 million t = 45 % of the total production of USSR. Ukraine must come eight in world production. In Dnipro-Ukraine and North Caucasia in the same year, 940 000 t of fire-proof earthenware and dinas bricks were produced, 924 000 t lime, 220 000 t chalk, 207 000 t alabaster and 37 000 t gypsum.

Excellent kaolin is found in Dnipro-Ukraine. In 1913 34 400 t and in 1931, 78 500 t were produced. In 1928 the 11 porcelaine factories in the country had an output of 18 700 t (⅓ of total 323

4: Allen H-4 (no date) 1941 RD1 Ukraine RD1



the New Russian Governments) there were over 1 million hectares under beetroot. Just before the last war the annual production of beet in the Ukraine reached 150 million quintals: i.e. 18 per cent of world production. The production of Ukrainian beet sugar ranked fourth—after that of America, Germany and France. In 1913 the Ukraine produced 11 million quintals of crystallized sugar. This output, together with that of the Polish factories, covered all the needs of the internal market (which during the preceding twenty-five years had augmented fourfold) and provided substantial surplus for export to the Baltic and the Middle East.

In addition to the beet processing plants, about 60 per cent of the alcohol refineries (corn, potatoes) of the Empire were located in the Ukraine. The production of vegetable oil (particularly from sunflower seed) was also important.

It has been estimated by the Soviet paper *Pravda* that approximately 1 milliard of rubles a year was paid for services on the semi-industrialized estates of landowners throughout Russia: of this sum a considerable proportion was paid for the hire of horse transport (since landowners did not maintain a large number of draught horses but hired from the villages). Of this milliard, about 300,000,000 were paid out in the Ukraine. As the peasant population of the Ukraine numbered about fifteen millions, some 20 rubles a year per head of the population was earned on 'supplementary' work on the large estates. 'Only owing to the sugar and other agricultural industries could the dense population of the Ukraine exist in such comparatively well-to-do circumstances.'

Thus the agricultural economy of Podolia, Volhynia, Kiev, Chernigov and Poltava was based only partly on the production of cereals. With a population which reached nearly twenty millions, only about 2 million hectares were under wheat, while in New Russia, with a population about half that of the Ukrainian Governments, there were 4 million hectares under wheat. The Ukraine exported only small quantities of wheat to Poland and White Russia, which provinces drew the bulk of their supplies from New Russia. The real 'granaries' of Russia which supplied the whole Empire and exported a surplus abroad were the regions of the northern Caucasus and Trans-Volga with western Siberia and New Russia (including the Governments of Kherson and Ekaterinoslav with the northern part of Tauris and the southern part of Kharkov) In those regions the black earth really had a virgin quality during the first half of the nineteenth century; and its richness remains exceptional even now.

As a rule, the climatic conditions in the *New Russian Governments*

339 To finish with heavy industries, let us still mention the production of building materials—600,000 tons of cement (in the region of the Sea of Azov) and 1 milliard of bricks are annually manufactured in the Ukraine.

258 As for light industry, it is that of food production which occupies the first place.

257 The sugar industry of the whole of Russia is to be found almost entirely in the Ukraine. 12,000,000 quintals of crystallized sugar and 4,000,000 quintals of refined sugar can be produced here annually.

256 The milling industry also occupies an important place. Very important mills, many of which are supplied with highly perfected means of sifting and straining, specialized in the manufacture of fine flours for export before the last war. This industry is concentrated in the ports or in the towns near these or near river ports and in the surroundings of important railway junctions of the southern region. This industry represents 35 per cent of the whole milling industry of the Union and produces, despite the fact that it is not working at full pressure, 2,500,000 tons of wheat flour per annum.

249 The oil mills of the Ukraine produce 40,000 tons of sunflower oil, 3000 tons of linseed oil, and 3000 tons of mustard oil.

274 70 per cent of the alcohol distilleries of the Soviet Union are also in the Ukraine, manufacturing all types of alcohol: from corn, for drinks such as vodka and other liqueurs, and from potatoes, for the dye industry, for pharmaceutical products, and for perfumery.

277 The very important tobacco industry is distributed throughout the great centres of the territory.

255 As for the production of tinned foods, 78 per cent of the production of the Union originates from the Ukraine. Important quantities of vegetables (especially of tomatoes) and of fruit are tinned and exported from the territory.

433 became /165/ "Red Progress, Dnepropetrovsk", and so on. The giant tractor factory in Khar'kov was newly erected, an accomplishment which is proudly shown to every foreign visitors. Important, however, is not only the number of tractors that leave the factory, but also their serviceability and durability. The significance of the industrial plants which have remained from the pre-war period is also evident from the invested capital, according to which, just as before, the iron industry ranks first, coal second and the sugar industry third. In these three industries half of the entire capital invested in Ukrainian industry is combined. Only after that come machine construction and the chemical works which to a certain extent have arisen only in most recent times. (106)

106. Kubiyovich: Commentary to the Atlas, page XXXIII.

257 The sugar industry forms only a part of the food and luxury industry which was a very important branch even before the war. Its center is in the beet-growing region between Podolia, Kiyev and Khar'kov. In 1913 200 Ukrainian sugar factories produced 1.2 million tons of sugar, in 1933 170 factories produced 0.8 million tons. (107)

107. Deminskiy, The Economy of the Ukraine, page 140.

258 Besides that there is, also dating back to the pre-
● 274 war period, a considerable mill and oil industry, the latter in the Kuban region, as well as distilleries.

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369 The increase of urban population is a natural concomitant of industrialization. The Ukraine has